

Review of the Indo-Australasian Parasites of the Fruit Flies (Tephritidae)

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In connection with the program of the U. S. Government, State of California and agencies in the Territory of Hawaii, working in cooperation to investigate the parasitism and predation occurring in the fruit flies (Tephritidae), it has been my privilege to examine representative lots of specimens from the various consignments of fruit fly parasites and predators received in Honolulu from collectors in different parts of the world. These have come mainly from three regions, namely, from Africa, the Indo-Australasian region, and from South America. I believe it is desirable to treat the different regions separately in reporting the results of my study, and to begin, I offer the following report on the Indo-Australasian representatives.

It is unfortunate that the types of the species of opiine parasites described from this region are scattered and largely unavailable for study, as the descriptions are often meagre and insufficient for making a positive identification. An effort has been made to have specimens in hand compared with types, but with regard to types in Budapest, Berlin, Formosa, etc., it is not known whether they are still intact and available for study.

A study of the opiine parasites¹ discloses the fact that they can be separated readily into groups on characters peculiar to the representative species *O. longicaudatus* (Group 1), *O. persulcatus* (Group 2), and *O. fletcheri* (Group 3), these being (a) presence (in Groups 1 & 2) or absence (in Group 3) of the post-nervellus in the hind wing; and (b) character of the parapsides: foveolate (in Group 2) or smooth (in Group 1). Specimens studied in these groups were:

GROUP 1

- O. longicaudatus* (Ashmead) from Philippines; Malaya; India; Thailand; New Caledonia; Marianas
- O. kraussii* n. sp. from Australia
- O. formosanus* Fullaway from Formosa
- O. tryoni* Cameron from Australia
- O. compensans* ? (Silvestri) from South India
- O. watersi* n. sp. from North India

¹ In addition to the opiines there were the following: *Bracon fletcheri* Silvestri from India, *Bracon* sp. from China, an alysiid *Cratospila* sp. from India, a cynipid from India, one from the Philippine Islands, several species from Malaya and one from Australia (*Trybliographa daci* Weld); the following chalcids: a *Dirhinus* from Australia, several species from India, one from Malaya; *Tachinaephagus* sp. from Malaya and Formosa, *Spalangia* sp. from India, one from China, one from New Caledonia, one from Australia, one from Malaya; *Pachycrepoideus dubius* from Malaya, China, Australia and Formosa; *Syntomosphyrum indicum* from India and Malaya; the proctotrupid *Galesus* sp. from India, Malaya and Australia; the staphylinid predator *Thyreocephalus albertisi* (Fauvel) from Australia and other staphylinids from the Philippine Islands.

GROUP 2

- O. persulcatus* (Silvestri) from India, Philippines; Thailand
- O. deceleratus* Fullaway from Australia
- O. oophilus* n. sp. from Malaya; North Borneo; Thailand; India; Formosa
- O. skinneri* n. sp. from Philippines
- O. carpomyiae* (Silvestri) from India
- O. arisanus* Sonan from Formosa; Thailand; Malaya; India
- O. javanus* (Fullaway) from Malaya; Thailand

GROUP 3

- O. fletcheri* Silvestri from India; Java; Malaya; Philippines
- O. incisi* Silvestri from India; Malaya
- O. fijensis* Fullaway from Australia; Fiji; New Caledonia
- O. makii* Sonan from Formosa
- O. perkinsi* Fullaway from Australia
- O. froggatti* Fullaway from Australia
- O. manii* n. sp. from India; Malaya; Thailand
- O. bianchii* n. sp. from India

The eight species included in the *fletcheri*, or No. 3 group, are distinguished from the other optines considered, by the absence of the post-nervellus from the hind wing. Lack of complete parapsidal grooves is likewise a distinguishing characteristic. *Opus fletcheri*, *incisi* and *fijensis* are very similar in most respects and are undoubtedly closely related. By some competent hymenopterists they are considered indistinguishable, but personally I consider them distinct species, and this view is supported to some extent by biological data. *O. incisi* is definitely a parasite of *Dacus dorsalis*, whereas *O. fletcheri* is primarily a parasite of *Dacus cucurbitae*. Fortunately I had on hand specimens of *fletcheri* identified by Silvestri, which I had myself collected in India. *Opus makii* Sonan appeared to me to be indistinguishable from *O. incisi* but dissections of the female made by K. S. Hagen disclose differences in the genitalia. *O. makii* possesses a small milk-sac which *O. incisi* lacks altogether. The ovipositor appears to be uniformly shorter, not extending beyond the tip of the wings as it does in *O. incisi*. The other four species in the group are new or recently described; they are all small species with peculiar mesonotal characteristics and an entirely different type of wing venation from the *fletcheri* series.

The species included in the *persulcatus* or No. 2 group and the *longicaudatus* or No. 1 group, in contradistinction to the species included in the *fletcheri*, all possess a post-nervellus in the hind wing. They have another common characteristic, the possession of complete parapsidal furrows. They are furthermore different from *fletcheri* and its close allies in having relatively smaller eyes and a longer clypeoculal line. The main difference between the species in Group 2 (*persulcatus* group) and Group 1 (*longicaudatus* group) is, as indicated above, in the character of the parapsidal grooves: in the former the grooves are foveolate, in the latter they are smooth. There are differences also in the wing venation: in the former the first cubital cross-vein is interstitial, or nearly so, with the recurrent nerve; in the latter the first cubital cell is pedicellate.

Seven species are now distinguished in what is called the *persulcatus* group because of the common possession of foveolate parapsidal grooves, post-nervellus in hind wing and interstitial first cubital cross-vein and recurrent nervure in forewings. It is not certain that Silvestri's species *persulcatus* has been correctly identified from the many different forms seen in this variation-ridden complex of species, but at the moment and until we can obtain co-types from Italy, what is familiarly known as the South India pale form, is being so considered, because it is the form that fits his description closest and is from the type locality. *Opius carpomyiae*, *javanus* and *arisanus* have also been tentatively identified in this material. *O. deeralensis*, *skinneri* and *oophilus* are plainly different and have been described as new species, the first in a previous number of the "PROCEEDINGS" (14:65, 1950), the latter two herewith. The differences in *oophilus* were not considered significant until it was discovered that its eggs and its egg-laying habits are quite anomalous (see paper by van den Bosch and Haramoto, p. 251 of this issue of the "PROCEEDINGS").

Difficulty was also experienced in recognition of species in the *longicaudatus* group. Of described species, *comperei*, *formosanus* and *compensans* may be simply local or color varieties of the species from Manila described by Ashmead in 1905 as *Biosteres (Opius) longicaudatus*. A compared specimen, determined by Muesebeck as *comperei*, is in my possession, also the type of *formosanus*, which is clearly a color variety. In the Indian material from the type locality I believe I can identify *compensans*. On the other hand, *O. kraussii* presents differences in color of wings and absence of striae on the 1st and 2nd abdominal tergites, in addition to displaying a decided host preference (for *Ceratitis capitata*). *O. watersi* also should, I believe, be considered a distinct biological entity on account of its different host-relationship (it is propagated only on *Dacus cucurbitae*). Both are here described as new species.

The types of the species herein described, except as noted, will be deposited in the U.S. National Museum.

***Opius bianchii* n. sp.**

Female.—3 mm. long, smooth and shining, finely clothed with silvery hairs; color of body generally chestnut brown, often more or less marked with black on vertex and occiput of head, on pronotum, mesonotum in median anterior and lateral posterior longitudinal broad stripes, prescutellar sulcus and lateral depression of metanotum, propodeum, mesopleura, in fact entire mesothorax, 1st, 4th, 5th and 6th abdominal tergites; legs yellowish brown or straw colored, eyes, ocellar space, antennal flagellum, ovipositor sheaths, tips of tarsi and stigma of wings also black or blackish; sparsely punctuate with microscopically fine setiferous punctuations.

Head transverse, width three times length, wide between the eyes which are fairly large, oval and convex; ocelli placed anteriorly in the middle on vertex, the members arranged in the form of an equilateral triangle, the anterior and lateral members nearly equidistant, but distance from latter to border of eye is nearly one and one-half times the width of base; antennae as long as or a little longer than the body, inserted not too close together on the front of the head where the front merges into the face and in a groove or depression with a median broad longitudinal carina separating the lateral halves and extending down on to face; the sockets of the antennae with elevated rims which laterally approach the inner border of the eye, 35-segmented, scape and pedicel stout, the flagellum filamentous; face considerably wider than long, slightly convex and carinate in the upper center as stated above, clypeus distinct, width three or four times median length, anterior margin obtusely angulate, posterior margin arched or bowed;

clypeal fossae deep; genae half the basal width of mandibles; cheeks rather wide; a rather wide space between clypeus and mandibles, which are curved and apically toothed.

Thorax robust, nearly as deep as long and about half as wide; as wide as the head, sides of the pronotum deeply sulcate along anterior and posterior margins, posterior sulcus costate; mesothoracic scutum without complete parapsidal grooves, the same indicated by short, deep and wide furrows extending inward from the anterior lateral corner, and a wide and fairly deep fossa on the median line near the posterior border extended cephalad as a narrow shallow groove to mid length; transverse prescutellar sulcus fairly wide and deep and divided by costae into four compartments; scutellum triangular, slightly convex on the disc, declivous at the sides, which are greatly eroded and have a costate furrow along upper margin; metanotum with a median knob to the raised posterior margin, excavated at the sides to form a deep sulcus which is costate or ribbed; propodeum convex, declivous behind and at the sides, coarsely rugose; mesopleura with a deep, wide costate sulcus anteriorly on the disc.

Abdomen short ovate, somewhat compressed apically, the sides anteriorly collapsed, 1st tergite widening outwardly so that the apical width is more than twice the basal, two laterally placed carinae rim a deep basal excavation and extend posteriorly on the disc nearly the whole length of the tergite, the sides of which are also margined, the wings triangular, flat, smooth; 1st tergite is separated from the following tergites by a (medially) deep, wide furrow which is interrupted in the middle by a knob-like projection from 2nd tergite, and tergites 1 and 2 are longitudinally striate; the following tergites 3 to 6 nearly equal in length; all have a transverse line of whitish hairs near their posterior borders; greatest width of abdomen is at posterior limit of 2nd segment; terminal tergites narrowing to a blunt apical end; ovipositor exerted, nearly as long as abdomen (about seven-eighths its length); legs rather slender.

Wings hyaline, veins fuscous; radius in forewings arising at or a little before the middle of the stigma, the width of which is less than half the length, and more than double the length of the 1st abscissa of the radius; 2nd abscissa five times the length of 1st and longer than the 1st cubital cross-vein, which is broken at lower end so that the 1st cubital cell is pedicellate and the 2nd cubital cell is 5-sided and five times as long as wide at outer end; nervulus interstitial, nervus paralellus joins the median below the middle; hind wings without post-nervellus.

Male unknown.

Described from eight females (type and paratypes) reared from *Carpomyia vesuviana* Costa puparia from Bareilly, India, April 1950.

Opius manii n. sp.

Female.—3 mm. long, smooth and shining, finely clothed with silvery hairs, color of body generally black, head mostly testaceous, legs ochreous or yellowish brown (except hind femora, which are infuscated and more or less blackish); sparsely punctuate with microscopically fine setiferous punctuations; flagellum of antennae, eyes, ocellar space, sheaths of the ovipositor, tegulae, tips of tarsi black or blackish.

Head transverse, width three times length, wide between the eyes, which are convex; ocelli near the middle of the vertex, the members arranged in the form of an equilateral triangle, the anterior and lateral members nearly equidistant but distance from latter to border of eye is twice as great; antennae as long as, perhaps a trifle longer than the body, inserted not too close together on the front of the head where the front merges into the face, the sockets deep with elevated rims which laterally approach the inner border of the eye, 34-segmented, scape and pedicel stout, the flagellum filamentous; face considerably wider than long, slightly convex, although depressed at the sides beneath the antennal sockets and with a median carina extending from between antennal sockets half the length of face; clypeus distinct, three to four times as wide as median length, anterior margin obtusely angulate, posterior margin arched or bowed; clypeal fossae deep; genae less than basal width of mandibles; cheeks rather wide; a rather wide space between clypeus and mandibles, which are curved and apically toothed.

Thorax robust, as deep as long and nearly as wide, appreciably wider than head; sides of the pronotum deeply sulcate; mesothoracic scutum without complete parapsidal grooves, the same indicated by short, deep and wide furrows extending inward from the anterior lateral corner and a wide and fairly deep fossa on the median line near the

posterior border extended cephalad as a narrow shallow groove to mid length and beyond; transverse prescutellar sulcus fairly wide and deep and divided by costae into four compartments; scutellum triangular, slightly convex on the disc, declivous at the sides, which are greatly eroded with small pits in the hollow; metanotum with a median knob to the raised anterior margin, excavated behind to form a deep groove or sulcus which is costate or ribbed; propodeum convex, declivous behind and at the sides, indistinctly areolate and more or less rugose; mesopleura with a deep, wide sulcus near lower margin, also prepectus.

Abdomen ovate, somewhat compressed apically, the sides anteriorly collapsed, 1st tergite widening outwardly so that the apical width is about twice the basal, two laterally placed longitudinal carinae rim a deep basal excavation and extend posteriorly on the disc nearly the whole length of the tergite, the sides of which are also margined; a few irregular longitudinal carinae lie in between; wings triangular, flat, membranous and rather pallid; the 1st tergite is separated from the following tergites by a shallow furrow which is interrupted in the middle by a knob-like projection from the 2nd tergite; the following tergites, 3 to 6, nearly equal in length; all have a transverse line of hairs near their posterior borders; the 2nd tergite often with a few short striae, ovipositor exerted and one-half to five-eighths length of the abdomen. Legs rather slender, hind femora and tibiae, however, somewhat enlarged. Wings infumate, veins fuscous, radius of anterior wing arising at or a little before the middle of the stigma, which is just a little wider than the 1st abscissa of the radial vein is long, 2nd abscissa three times as long as the 1st and exceeding in length the 1st cubital cross-vein, which is broken before joining the recurrent nervure so that 1st cubital cell is pedicellate and the 2nd is 5-sided; nervulus postfurcal, nervus parallelus joins the median below the middle; hind wing is without post-nervellus.

Male is similar to female except in secondary sexual characters.

Described from two female and one male specimens (type, allotype and paratype) reared from material labeled *Dacus ferrugineus* var. *incisus*, from *Solanum verbascifolium*, at Coonoor, India, August 1935. In the opinion of Dr. D. E. Hardy, the Indian material labeled *D. ferrugineus* var. *incisus* Walker is probably *Dacus dorsalis* Hendel.

***Opius skinneri* n. sp.**

Female.—5 mm. long, black throughout except the fore and mid legs which are brown; hind legs black to apex of the femur, tibiae and tarsi infusate or dusky brown; antennae and ovipositor, veins of the wings also dark or dusky brown; more or less shallowly and closely punctuate on the thorax in front of the rugose propodeum; head also punctuate but the punctuation there is coarser and not as sparse as on the thorax; the head and thorax also have a fairly thick clothing of silvery white hairs which extends weakly to the abdominal sternites and on the tergites to some extent, though there the clothing is sparser; abdominal tergites 1 and 2 are longitudinally striate but beyond the 2nd the tergites are rather smooth and polished except for punctuation.

Head transverse, more than twice as wide as long; wide between the eyes, which are fairly large, and extending from the vertex half way down face, convex in shape; ocelli arranged in an equilateral triangle on the vertex, the field being elevated and smooth, with a circumferential groove in which the posterior ocelli stand almost vertical; ocelli to the eye nearly twice the distance from ocellus to ocellus, or equaling basal width; antennae fairly close together, further removed from the eye than from each other, the sockets deep with elevated rims; 49-53 segmented, scape and pedicel stout, flagellum filamentous; face convex; subcarinate medially longitudinally, carina extending to lower margin of clypeus; wider than long, receding below; clypeus obtusely angulate on lower margin, arcuate on upper, presenting a smooth polished surface sparsely punctuate, fossae deep, cheeks fairly wide, equaling basal width mandibles, which are stout, curved and apically toothed.

Thorax robust, as wide as the head and deeper than wide, mesothoracic scutum with parapsidal grooves very deep, converging and provided with large fossae; prescutellar sulcus with four to five deep fossae; scutellum roughly triangular in shape, slightly convex; mesonotum carinate in the middle and foveolate at the sides, with an anterior and posterior smooth transverse band; propodeum irregularly areolate and somewhat

rugose, with short median longitudinal carina basally; stigmata small and round; pronotum laterally and mesopleura with deep and fossulated sulci.

Abdomen ovate, slightly convex dorsally, somewhat compressed apically, ventrally collapsed toward base, 1st and 2nd tergites separated by a deep sulcus, 1st tergite weakly bicarinate longitudinally, sides also strongly margined, following tergites with a transverse line of fine silvery hairs close to the posterior border, tip of the abdomen embrowned; ovipositor exerted twice the length of the abdomen. Legs rather slender. Wings hyaline, radius in anterior wing arising beyond the middle of the stigma, which is black and lanceolate in shape (width about one-fifth length), 2nd abscissa nearly twice the length of the 1st but shorter than 1st transverse cubitus, which is interstitial with the recurrent nervure, nervulus interstitial with basal nervure or only slightly postfurcal, nervus parallelus joining median much below the middle. Hind wing with post-nervellus.

Male a little smaller than the female but otherwise very similar.

Described from 16 female and 12 male specimens (type, allotype and paratypes) reared ex fruit fly puparia taken from cucurbits at Pongi Mina, Mindanao, Philippine Islands, in March 1950, by F. E. Skinner.

Opius oophilus n. sp.

Female.—4 mm. long, head ochraceous, thorax and abdomen black (the former not solid black but having more or less extensive areas of the mesonotum brownish), more or less shallowly and closely punctate on the thorax in front of the propodeum; head also punctate but the punctuation here is coarser and not as sparse as on the thorax. The head and thorax also have a fairly thick clothing of silvery white hairs which extends weakly to the abdominal sternites and on the tergites to some extent though there the clothing is sparser. Abdominal tergites 1 and 2 are longitudinally striate but beyond the 2nd the tergites are smooth and polished. The 5th and 6th are generally stramineous, as are the trophi and the legs, but the mid and hind tarsi are generally dusky. The antennae are dusky brown basally, becoming black outwardly. The ovipositor also is black.

Head transverse, more than twice as wide as long, wide between the eyes, which are convex; ocelli arranged in an equilateral triangle on the vertex, the field being elevated and smooth, with a circumferential groove, in which the posterior ocelli stand almost vertical. Ocelli to the eye nearly twice the distance from ocellus to ocellus. Antennae fairly close together, further removed from the eye than from each other, the sockets deep with elevated rims; 39-segmented; scape and pedicel stout, flagellum filamentous. Face convex, subcarinate medially longitudinally, wider than long, receding below. Clypeal fossae deep. Cheeks fairly wide. Mandibles stout, curved and apically toothed.

Thorax robust, as wide as the head and deeper than wide; mesothoracic scutum with parapsidal grooves very deep, converging and provided with large fossae; two slight submedian depressions anteriorly; prescutellar sulcus with four deep fossae; scutellum triangular, slightly convex; metanotum carinate in the middle and fossulate at the sides with an anterior and posterior smooth transverse band; propodeum irregularly areolate and somewhat rugose; stigmata small and round; pronotum laterally and mesopleura with deep and fossulated sulci.

Abdomen ovate, slightly convex dorsally, somewhat compressed apically, ventrally collapsed toward base; 1st and 2nd tergites separated by a deep sulcus; 1st tergite longitudinally weakly bicarinate, sides also strongly margined; 4th and following tergites with a transverse line of fine silvery hairs close to the posterior border; ovipositor exerted, twice the length of the abdomen and very slender.

Legs rather slender. Wings hyaline, veins fuscous, radius in anterior wing arising at about the middle of the stigma, which is triangular and fairly broad at middle (width a little more than one-third length), 2nd abscissa somewhat shorter than the 1st transverse cubital, which is interstitial with the recurrent nervure or generally nearly so; nervulus interstitial with basal nervure or only slightly postfurcal; nervus parallelus joining median much below the middle. Hind wing with post-nervellus.

Male a little smaller than the female but otherwise very similar.

Described from 8 female and 3 male specimens (type, allotype and paratypes) reared from *Dacus dorsalis* Hendel at Honolulu, Oahu, Ha-

waiian Islands, during September 1950. Although these types were bred from material collected on Oahu, this opiine is not a Hawaiian species. The material from which the Oahu generations originate is believed to have come from Malaya.

The distinctive characteristics of this species are the reddish head, black and shining abdomen, broad stigma in forewing, and slender ovipositor, the valves of which are pointed and not spatulate.

***Opius kraussii* n. sp.**

Female.—Length of body 4 mm.; smooth and shining, sparsely clothed with silvery hairs; ochraceous; sparsely punctuate with microscopically fine setiferous punctuations, face especially close beset; eyes, ocelli, ovipositor sheath, antennae (except basal fourths of scape, which is concolorous with body), hind tarsi and tips of all other tarsi black or blackish.

Head transverse, twice as wide as long, wide between the eyes, which are short oval and convex; ocelli near the middle of the vertex, arranged in the form of an obtuse triangle and with a depression on the outer face; distance between the lateral members much greater than the distance between the lateral and anterior member, these being practically contiguous; distance between the lateral members and the inner margin of eye about one and one-half times that between the centers of the lateral members; antennae longer than the body, inserted fairly close together (not much further removed from eye than from each other), the sockets deep with elevated rim; 42-48-segmented; scape and pedicel stout, the flagellum filamentous; face wider than long, more or less convex; clypeus distinct with anterior margin obtusely angulate and only slightly prominent, hind margin curved to semicircular form; cheeks fairly wide; mandibles stout, curved and apically toothed, base nearly as wide as distance to margin of eye; maxillary palpi 5-segmented, long, labial 3, short.

Thorax robust, half again as long as deep or wide, as wide or a trifle wider than the head; sides of the pronotum deeply sulcate; mesothoracic scutum convex, with deep parapsidal furrows converging and uniting in a short and rather wide fovea, which extends almost to the posterior margin of the mesoscutum; transverse prescutellar sulcus median and only half the basal width of the scutellum, costate and divided into six deep fossae; scutellum triangular, slightly convex on top and declivous at the sides; metanotum a flat transverse band somewhat depressed; propodeum convex, areolate, the median areola closed apically and pedicellate on a short carina-like stem at the base; lateral surfaces of the propodeum pitted and carinate to a certain extent; mesopleura marked with a costate groove anteriorly and a depression posteriorly at about middle depth; stigmata small and round.

Abdomen ovate, somewhat compressed apically, the sides anteriorly collapsed, smooth and polished throughout, first tergite medially bicarinate, sides strongly margined as well, separated from following tergites by a deep sulcus; apical tergites with a transverse line of hairs close to the posterior border; ovipositor exerted and as long as the body. Legs rather slender, although the femora are inclined to be stout. Wings infumate, veins fuscous, radius in anterior wing arising near the middle of the stigma, which is lanceolate; 2nd abscissa of the radius three times length of first but not as long as the 1st cubital cross-vein, which is broken before it joins the recurrent nervure interstitially so that 1st cubital cell is to a degree pedicellate; 2nd cubital cell longer than wide, as long as the 1st cubital; nervulus in front wing is postfurcal, nervus parallelus intersecting below the middle on median, post-nervellus present in hind wing.

Male similar to female in all but sexual characteristics.

Described from 2 female and one male specimens (type, allotype and paratype) reared from fruit fly pupae ex *Planchonella*, Deeral, Australia, 1949, Krauss collector. Types in the Hawaiian Entomological Society collection.

***Opius watersi* n. sp.**

Female.—About 5 mm. long; smooth and shining, finely clothed with silvery hairs, which are especially numerous on the face and propodeum; ochraceous (yellowish

brown) throughout, sparsely punctate with microscopically fine setiferous punctuations, face closely beset; eyes, ocelli, sheaths of ovipositor, antennae apically, tips of tarsi and hind legs from femur outwardly black or blackish.

Head transverse, nearly twice as wide as long, wide between the eyes, which are convex; ocelli near the middle of the vertex, forming an obtuse triangle and with a depression on the outer face, the lateral members farther apart than anterior and lateral (2x) but distance to margin of eye greater ($1\frac{1}{2} \times$ base triangle); antennae longer than the body, fairly close together at base (further removed from eye than from each other), the sockets deep with elevated rim, 45-48 segmented, the scape and pedicel stout, the flagellum filamentous; face wider than long, convex in the middle, depressed at sides and receding somewhat below; clypeus distinct, the fossae deep; cheeks fairly wide; mandibles stout, curved and apically toothed, black; distance from base to eye margin a little more than basal width; maxillary palpi 6-segmented, labial 4 and considerably shorter.

Thorax robust, nearly as deep as long and only half as wide but wide as the head, sides of the pronotum deeply sulcate, mesothoracic scutum with deep, smooth parapsidal furrows converging caudad to a small median longitudinal depression situated a little before the posterior margin; transverse prescutellar sulcus with from two to six pits depending upon the number of costae but never undivided, and furthermore, the sulcus is generally more deeply and widely excavated and occupies a larger part of the scutellum (about one-fourth to one-third the length); scutellum triangular; metanotum transverse, a smooth sulcus between the carinated anterior and posterior margins; propodeum convex, declivous behind, irregularly areolate and generally with a short median carina extending caudad from anterior margin; mesopleura with a deep costate sulcus along lower anterior margin and a deep fossa near middle posteriorly.

Abdomen ovate, somewhat compressed apically, the sides anteriorly collapsed, 1st and 2nd tergites longitudinally striate and separated by a deep sulcus, the former also longitudinally bicarinate sublaterally and the sides strongly margined as well; following tergites smooth and shining, with a transverse line of fine silvery hairs close to posterior border (often with transverse black bands); ovipositor exerted and as long as the entire body.

Legs rather slender, femur fairly stout. Wings hyaline, veins fuscous; radius in front wings arising at about the middle of the stigma, which is lanceolate (width one-fourth length). 1st transverse cubitus broken near apex and extended at nearly right angle to cubitus. 2nd abscissa of the radius and 1st section of the 1st transverse cubitus subequal in length.

Male generally smaller, abdominal tergites 3-8 with transverse black band on anterior half.

Described from 6 females (type and paratypes) reared from fruit fly puparia ex *Luffa* collected at Bareilly, U. P., India, in November 1949, by Bianchi and Waters. Allotype ex laboratory bred material.